

**A RECONFIGURABLE SIGNAL PROCESSING IC WITH AN  
EMBEDDED FLASH MEMORY DEVICE**

**Abstract of the Disclosure**

A dynamically reconfigurable processing unit includes a microprocessor, and an embedded Flash memory for non-volatile storage of code, data and bit-streams. The embedded Flash includes a field programmable gate array (FPGA) port. The reconfigurable processing unit further includes a direct memory access (DMA) channel, and an S-RAM embedded FPGA for FPGA reconfigurations. The S-RAM embedded FPGA has an FPGA programming interface connected to the FPGA port of the Flash memory through the DMA channel. The microprocessor, the embedded Flash memory, the DMA channel and the S-RAM embedded FPGA are integrated as a single chip.